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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,622	01/24/2002	Toshikazu Tachikawa	2002-0069	6163

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SUITE 800  
WASHINGTON, DC 20006-1021

EXAMINER

ASHTON, ROSEMARY E

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 08/06/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/053,622

Applicant(s)

TACHIKAWA ET AL.

Examiner

Rosemary E. Ashton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5 is/are rejected.
- 7) ☒ Claim(s) 3,4 and 6-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/638,872.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 236.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

*Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

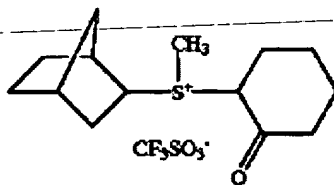
2. Claims 1,2,5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasa et al. U.S. patent no. 6,074,801.

In embodiments 9 and 13 shown below Iwasa teaches photoresist composition comprising an alkali soluble resin (A1), a sulfonium photoacid generator having a fluoroalkylsulfonate anion (C3) and a crosslinker MX280 which is formula (B1) all shown below.

## Embodiment 13

Like the embodiment 9, the photoresist material is produced using norbornyl(2-oxocyclohexyl)methylsulfonium trifluoromethanesulfonate (C3 shown below) instead of bis (dicyclohexylsulfonyl)diacromethane. Then, the exposing experiment was performed. As a result, a negative type pattern of 0.275  $\mu\text{mL/S}$  was obtained with the exposure dose of 55  $\text{mJ/cm}^2$ . The chemical formula C3 is as follows,

(C3)



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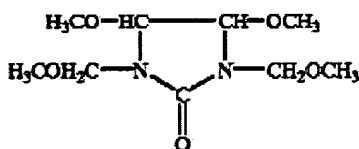
25

## Embodiment 9

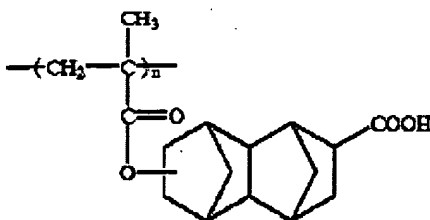
The photoresist having the following composition is produced. The following experiment was performed under a yellow lamp.

- (a) resin A1 (A1 shown in the embodiment 1) 4 g  
 30 (b) MX280 (commercially available from Sanwa Chemical) (main ingredient: B1 shown in the embodiment 2) 1 g  
 (c) bis(cyclohexylsulfonyl)diazomethanes (C1 shown in the embodiment 1) 0.05 g  
 35 (d) ethyl lactate 28.6 g

The chemical formula B1 is as follows,



(B1)



(A1)

Iwasa does not teach the amount of reagents in the composition in parts by weight as claimed, however, it would have been obvious to one of ordinary skill in the art to vary the amount of reagents using the percent by weight values taught in Iwasa and through routine experimentation so as to obtain a successful photoresist composition because such a procedure is standard in the art. As stated in section 2144.05 of the MPEP:

## MPEP 2144.05

*Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges*

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*by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).*

As to claim 5 Iwasa exemplifies the crosslinker B1 wherein R3 and R4 are C1 alkoxy groups, however, in col. 4, formula 5 R3 and R4 may both be hydrogen atoms. It would have been obvious to one of ordinary skill in the art to a crosslinker of B1 wherein R3 and R4 are hydrogen atoms with a reasonable expectation of obtaining a negative photoresist composition for exposure to less than 220 nm because Iwasa teaches this crosslinker may be used and will be responsive to less than 220 nm light.

***Allowable Subject Matter***

3. Claims 3,4,6-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
4. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach the polymer is a styrene polymer, that the composition contains an amine or carboxylic acid, a mixed solvent of PGME and PGMEA or the method of claims 11-15.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosemary E. Ashton whose telephone number is 703-308-2057. The examiner works a flexible work schedule and can normally be reached M-F between 10:00 am – 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached at 703-308-2303.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communication.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Rosemary E. Ashton  
Primary Examiner  
Art Unit 1752

rea  
August 1, 2003

ROSEMARY ASHTON  
PRIMARY EXAMINER

ROSEMARY ASHTON  
PRIMARY EXAMINER